explain. This could be mechanical in that the larger the person the larger the vascular and capillary bed and, therefore, the more opportunity for blood flow to become sluggish.

The fact that embolism in abdominal surgical procedures is more frequent and occurs at a lower SAM value may be explained by two factors. One is the result of stasis which is primarily a function of sluggish blood flow permitting fibrin and red cells to form a clot. The other is injury to the vessel endothelium which causes the platelets to become more adhesive and to gather at the injured site thereby forming a nidus for clotting.[3] It is conceivable in abdominal procedures that obtaining adequate exposure by various means would be capable of producing venous injury. Retractors, packing or holding the bowel away from the surgical site, could apply external pressure on major vessels to the point where intimal damage occurs.

Patient position during operation emerged as an important factor as postoperative emboli were absent in patients with SAM values of less than 200 unless the patient was placed in a position on the operating table other than supine or prone. It is well established that stasis is a very important factor and probably explains in a large measure the findings of increased risk of pulmonary embolism in the non-true prone/supine position.

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Recording Informed Consent

TO THE EDITOR: Two recent communications to the WESTERN JOURNAL have expressed negative opinions on the value of obtaining written (as opposed to oral) informed consent.[1,2] Unlike the two authors, I am not an attorney. Perhaps it is for this reason that I find it difficult to understand why this situation should differ from other fields of law, such as contracts, rental agreements, leases, agreements to purchase and the like—in all of which the written form is either preferable or required.

In addition, physicians should be aware that the Food and Drug Administration[3] and the National Institutes of Health require informed consent in writing for all investigational drugs in phase I and phase II studies, and in most instances in phase III studies. Similar requirements are enforced by the human research committees of all hospitals with which I am familiar.

In essence, of course, all consents are "written" unless they are tape-recorded, an option not discussed by the two authors. I fail to see why a potentially self-serving handwritten statement by a physician of what he told a patient is preferable to a typed or printed consent, signed by the patient himself, including the patient's statement that his questions have been answered, and naming the specific risks and benefits of the procedure in question, as required in *Cobbs vs Grant.*

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Phagocytosis in Chronic Myelocytic Leukemia

TO THE EDITOR: With great interest I read the report in the February issue by Shanley and Cline[1] on phagocytosis of hematopoietic cells by blast cells in a patient with chronic myelocytic leukemia (CML) blast crisis.

The authors mention in the discussion that CML is a clonal disease of the pluripotential stem cell. However, they do not consider the possibility of the phagocyting blast cells being immature members of the megakaryocytic compartment. Several data support this suggestion. In the majority of CML an increase of the megakaryocytic cell-line is observed in the bone marrow.[2] Reports on megakaryoblastic proliferation in CML blast crisis have been published.[3-6]

In our own material (unpublished) concerning CML blast crisis we have noted in several patients very suggestive evidence of megakaryoblastic proliferation on pure morphological grounds as well as on histological and cytochemical observations. The two cytochemical markers of the large blast cells in the report (negative in the peroxidase and alpha naphtyl butyrase reactions) make a monocytic origin less likely but do fit very well in the megakaryoblastic concept.

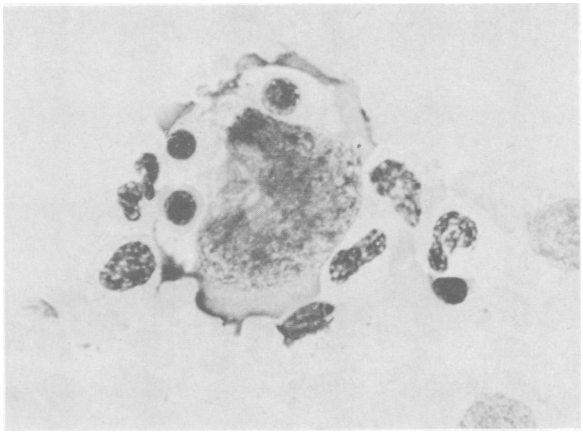

Figure 1.—Megakaryocyte enclosing three erythroblasts.

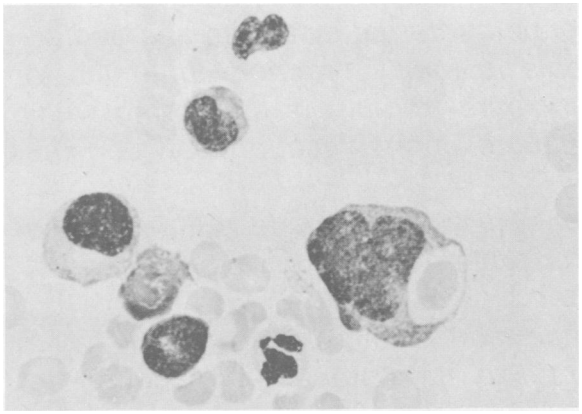

Figure 2.—Blast cell enclosing an erythrocyte.

Li and co-workers[7] observed a specific pattern of megakaryocytic cells in the nonspecific esterase reactions: a completely negative reaction in the alpha naphtyl butyrase reaction with a strong positivity for the alpha naphtyl acetate. This pattern was recently confirmed by Grusovin and Castoldi,[8] and we found the same.

Megakaryoblastic differentiation in Shanley and Cline's case is therefore more acceptable. In that case it is likely we are not dealing with real phagocytosis, but with a form of pseudophagocytosis, so-called emperipolesis. This phenomenon is well known in megakaryocytic cells.[9-11] In emperipolesis a cell is enclosed within the megakaryocyte without being destroyed itself or causing any visible damage to the "host" cell. Characteristic is the halo surrounding the enclosed cell (Figure 1). We did observe emperipolesis in the blast cells of a patient with megakaryoblastic leukemia (see Figure 2).

In conclusion we consider that the "phagocyting" cells in the report of Shanley and Cline are megakaryoblasts, which fulfill both criteria of emperipolesis: a halo surrounding the enclosed cell and no signs of damage of either the engulfed cell or the "host" cell.

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Dr. Cline Responds:

TO THE EDITOR: Although other nucleated cell forms are occasionally found within the cytoplasm of megakaryocytes, this phenomenon does not truly represent phagocytosis. Rather, it indicates that cells have migrated up the small demarcation channels which run through the cytoplasm of the megakaryocyte. Phagocytosis, on the other hand, is an active process by which the phagocytic cell surrounds the particle with its cytoplasmic membrane ultimately enclosing the particle in a cytoplasmic vacuole.

Both phagocytosis and the process by which nucleated cells enter megakaryocytes may result in an "internalized" cell surrounded by a halo when viewed by light microscopy. Light microscopy, therefore, cannot distinguish these two processes. It is generally thought that emperipolesis and true phagocytosis can be distinguished by the electron microscope. From the evidence we have available, it is impossible to state whether the cells we observed in our patient with chronic myelocytic leukemia in blast crisis were megakaryocytes. Dr. den Ottolander's view is interesting, but not conclusive.

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